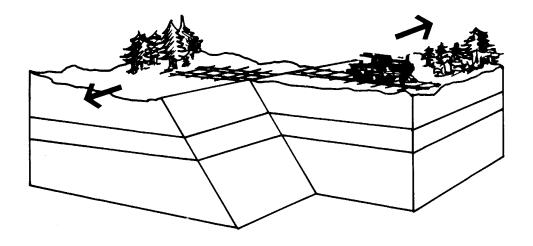
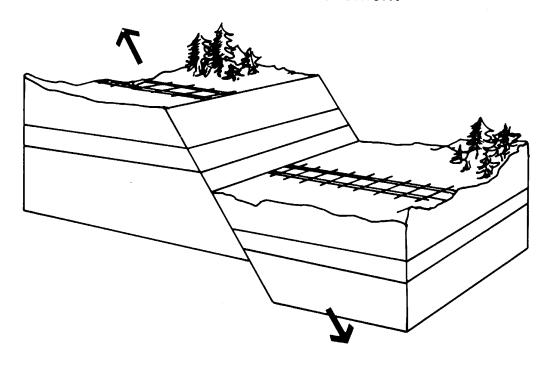
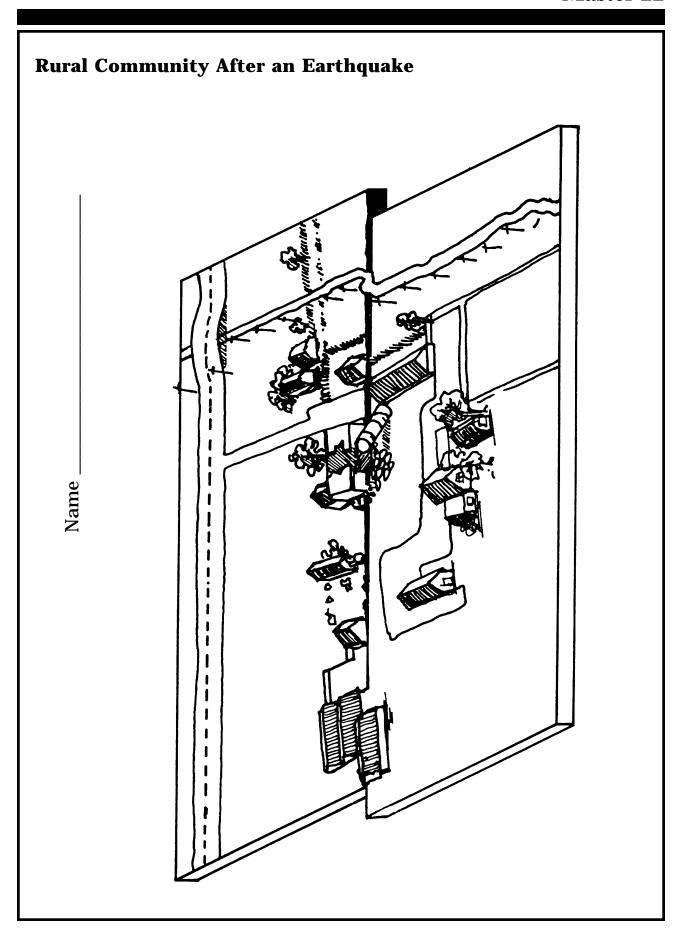
## **Fault Movements**

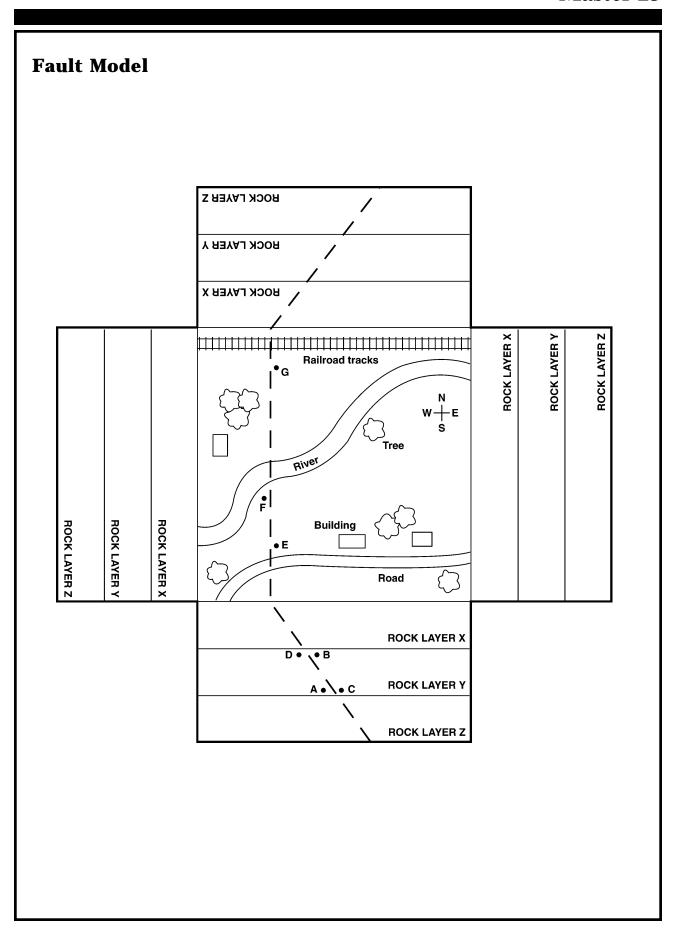
# Horizontal Fault Movement



# Vertical Fault Movement







### Tsunami Facts

### Tsunami

- **♦** Japanese word
- ◆ pronounced: soo nah me
- ♦ means "wave in the harbor"
- ♦ misnamed as "tidal waves"

- **Caused by:** ◆ earthquake
  - other movements on the ocean floor

### Travel at speeds up to 600 miles per hour

Tsunami traveling in deep water and open ocean cause no damage and are hardly noticeable.

Tsunami traveling in shallow water can batter coastlines with waves as high as 100 feet, causing considerable damage.

## **Tsunami Warning Centers**

Post warnings when earthquake of tsunami potential occurs.

### **Notable Tsunami**

**November 1, 1755.** A Lisbon, Portugal earthquake generated tsunamis that hit the west coasts of Spain, Portugal, and Morocco.

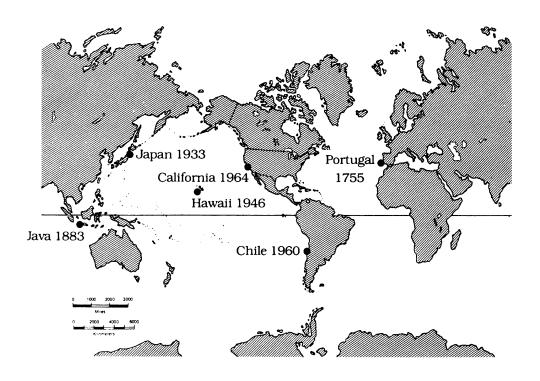
**August 27, 1883.** The volcanic eruption and explosion on the island of Krakatoa (west of Java in the East Indies) generated a tsunami that sent 100-foot (about 30 meters) waves crashing into Java and Sumatra, drowning 36,500 people.

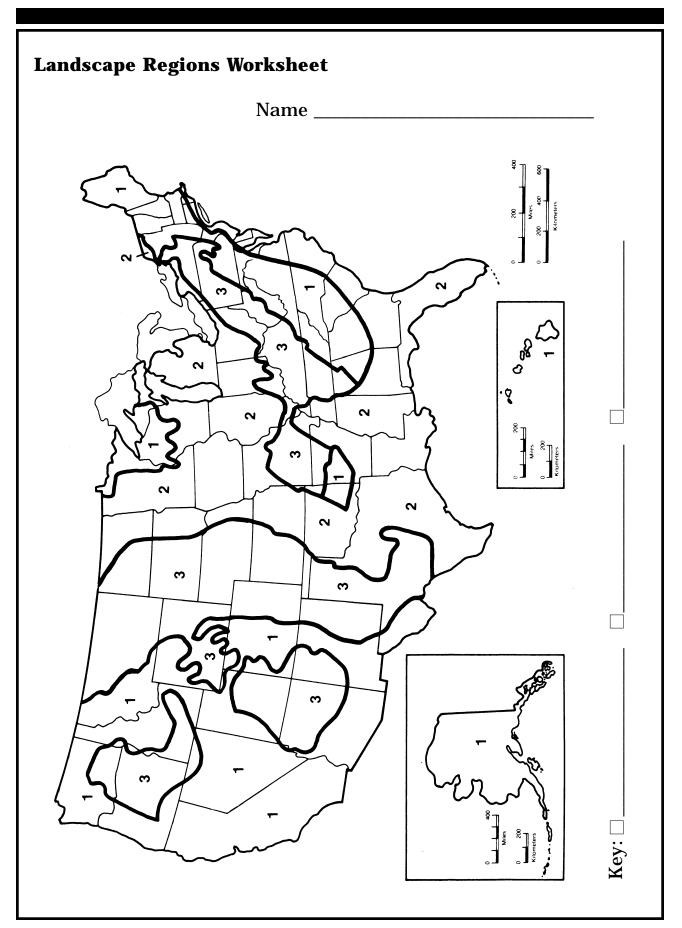
**March 2, 1933.** An earthquake along a submarine fault in the Japan trench (subduction zone) generated a tsunami that struck the Japanese coast with wave crests as high as 25 meters, killing 3,000 people.

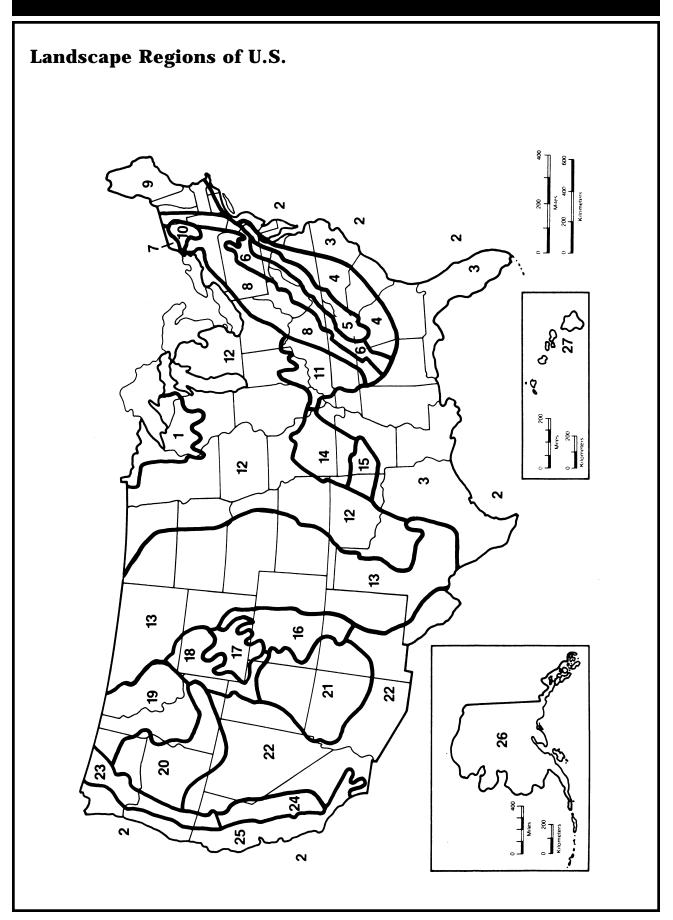
**April 1, 1946.** An earthquake on the sea bottom near the Aleutian Islands generated a tsunami that struck Hilo, Hawaii, killing 159 people.

**May 22, 1960.** An earthquake in Chile generated a tsunami, killing 1,000 people in Chile, Hawaii, the Philippines, and Japan.

**March 28, 1964.** The powerful Alaskan earthquake caused a tsunami that came ashore in many places, including Cresent City, California. It caused a total of 122 deaths and \$104,000,000 in damage, overall. Waves were 52 meters (about 170 feet) high in Valdez, Alaska.







### **Landscape Regions Key**

- 1. Superior Uplands mountains (1)
- 2. Continental Shelf plains (2)
- 3. Coastal Plain plain (2)
- 4. Appalachian Piedmont mountains (1)
- 5. Blue Ridge Appalachians mountains (1)
- 6. Folded Appalachians mountains (folded) (1)
- 7. St. Lawrence Valley plain (2)
- 8. Appalachian Plateaus plateau (3)
- 9. New England Uplands mountains (1)
- **10.** Adirondack Mountains mountains **(1)**
- 11. Interior Low Plateaus plateau (3)
- 12. Central Lowlands plateau (3)
- 13. Great "Plains" plateau (3)
- 14. Ozark Plateau plateau (3)
- 15. Ouachita Mountains mountains (folded) (1)
- **16.** Southern Rocky Mountains mountains (1)
- **17.** Wyoming Basin plateau **(3)**
- **18.** Middle Rocky Mountains mountains (1)
- 19. Northern Rocky Mountains mountains (1)
- 20. Columbia Plateau plateau (3)
- 21. Colorado Plateau plateau (3)
- 22. Basin and Range mountains (fault block) (1)
- 23. Cascade Mountains mountains (1)
- 24. Sierra Nevada Mountains mountains (1)
- 25. Pacific Coastal Ranges mountains (1)
- 26. Alaska (mostly mountains) mountains (1)
- 27. Hawaii (composed of volcanos) mountains (1)

